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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,104	10/27/2003	Shinji Uchida	00862.023280	1628
5514	7590	09/25/2006	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO			LE, DANG D	
30 ROCKEFELLER PLAZA			ART UNIT	
NEW YORK, NY 10112			PAPER NUMBER	
			2834	

DATE MAILED: 09/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/693,104

Applicant(s)

UCHIDA, SHINJI

Examiner

Dang D. Le

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 July 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 17-26 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 17-21 and 23-26 is/are rejected.  
7) ☒ Claim(s) 22 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 17-21 and 23-26 have been considered but are moot in view of the new ground(s) of rejection.

### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/12/06 has been entered.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 17, 18, 21, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Nihei et al. (4,945,268).

Regarding claim 17, Nihei et al. shows a positioning apparatus comprising:

- A movable member (3, Figure 7);

- A first pair of electromagnets (11, 12) configured to sandwich said movable member and each to generate suction power (fp1, fp2) having an inverse direction between said movable member and each electromagnet of said first pair of electromagnets; and
- A second pair of electromagnets (21, 22) configured to sandwich said movable member and each to generate suction power (fp1, fp2) having an inverse direction between said movable member and each electromagnet of said second pair of electromagnets,
- Wherein said first and second pair of electromagnets are controlled (through coils mount on 11, 12, 21, 22) to generate a driving force (f1) in a same direction in order to drive said movable member, and
- Said first pair of electromagnets (11, 12) is controlled to reduce generation of a leakage flux from said second pair of electromagnets (column 7, lines 5-65).  
It is noted that fp1 and fp2 (Figure 9) are maximum when T of 11 aligned with T of 4 at time t. However, fp1 of core 21 and fp2 of core 22 are smallest at the same time t. Therefore, the magnetic flux of 21 and 22 at time t is minimum. As a result, the leakage flux is also minimum.

Regarding claims 18, 21, and 23, Nihei et al. also shows each of said first pair of electromagnets (11-12 and 21-22) and said second pair of electromagnets being controlled to generate a magnetic flux having an inverted polarity (Figure 9) with respect to the other; currents of inverse directions (Figure 9) having substantially a same amount being applied to said first and second pair of electromagnets; and said first pair

of electromagnets and said second pair of electromagnets comprising a coil (6, Figure 12) and a core, wherein the coil is wound around the core.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nihei et al. in view of Karita et al. (4,868,432).

Regarding claims 19 and 20, Nihei et al. shows all of the limitations of the claimed invention except for said movable member including an iron core (magnetic material).

Karita et al. shows the iron core (20) for the purpose of increasing thrust force.

Since Nihei et al. and Karita et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use iron core as taught by Karita et al. for the purpose discussed above.

7. Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nihei et al. in view of Yuan et al. (6,069,417).

Regarding claims 24 and 25, Nihei et al. shows all of the limitations of the claimed invention except for a stage configured to be fixed with said movable member and to mount an object to be positioned, wherein said stage is driven in X-axis, Y-axis and Z-axis directions, and a rotational direction around respective axes.

Yuan et al. shows a stage configured to be fixed with said movable member and to mount an object to be positioned, wherein said stage is driven in X-axis, Y-axis and Z-axis directions, and a rotational direction around respective axes (Figures 4 and 5) for the purpose of manufacturing the semiconductor device automatically. Regarding claim 25, Yuan et al. also shows first and second optical system (136A, 136B).

Since Nihei et al. and Yuan et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to include a stage configured to be fixed with said movable member and to mount an object to be positioned, wherein said stage is driven in X-axis, Y-axis and Z-axis directions, and a rotational direction around respective axes as taught by Yuan et al. for the purpose discussed above.

Regarding claim 26, the device manufacturing method would be inherent and obvious since the prior art references meet the structural limitations of the claimed device.

***Allowable Subject Matter***

8. Claim 22 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: the record of prior art does not show a third pair of electromagnets configured to sandwich said movable member and each to generate suction power having an inverse direction between said movable member and each electromagnet of said third pair of electromagnets, wherein said third pair of electromagnets are controlled to cancel generation of a leakage flux from said first pair of electromagnets and said second pair of electromagnets as shown in claim 22.

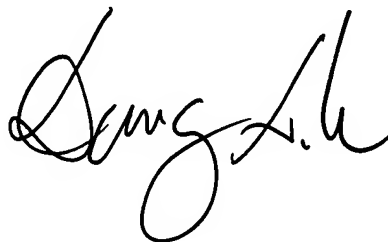
***Information on How to Contact USPTO***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D. Le whose telephone number is (571) 272-2027. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

9/17/06

A handwritten signature in black ink, appearing to read 'Dangle', with a large, stylized loop at the end.

**DANGLE  
PRIMARY EXAMINER**